

Panel Discussion: Public Issues/Concerns Regarding Microbial Biological Control

Alan Watson, Professor, Department of Plant Science, McGill University, 21111 Lakeshore Rd. Ste-Anne-de-Bellevue QC. H9X3V9 Email: alan.watson@mcgill.ca

Perceived risks of plant pathogens as biopesticides.

Perceived risks are highlighted by the question raised when a biocontrol agent is proposed. Does the pathogen harm other plants? How specific is it? Is it toxic to earth worms? Bees? My dog? Does it produce toxins (mycotoxins)? Does it affect humans? Does it mutate, change/ spread in the environment? Can you identify and track your organism in the environment? For the most part these questions are addressed via EPA and PMRA guidelines and registration procedures.

Factors affecting the development and use of microbial biopesticides

Microbial biopesticides have been registered in Canada for 35 years, but the number of registrations for commercial, restricted-industry and domestic uses has significantly increased over the past 10 years (Bailey et al. 2010). The increase is partly due to changes in government legislation, public awareness and end user adoption of emerging products that have lower risks to humans and their environment. Biopesticides use has expanded from under controlled environments, such as greenhouses and nurseries, to being applied in forestry, urban and agricultural settings. The end users of these products are changing from primarily commercial users in the greenhouse, nursery and forestry industries to include commercial/professional users in urban environments and domestic users in the home and garden. The demand for use in the urban environments stems from the public concern over food safety, the association of biopesticides with positive environmental effects, and preferences for organic or certified pesticide-free produce (Bailey *et al.*, 2010). Increased public awareness of environmental and health issues associated with pesticide use and the improved quality and performance of newer biopesticides over their earlier counterparts has contributed to the increasing demand for biopesticides by governments, general public, producers and small- to medium-sized industries (Bailey *et al.*, 2010). The general public is likely the most influential group; they cite food safety as a prime issue for pesticide reduction and perceive biopesticides as being safer than conventional chemical pesticides. Concerns voiced by this group have influenced the political sector, resulting in significant changes to legislation at federal, provincial and municipal levels. Government has legislated changes to the Pest Control Products Act in 2002 to reflect the public's demand for pesticide reduction and to encourage the registration of lower-risk pest control products. Since 1991, municipalities and provinces have actively banned federally approved pesticide products in urban areas in Canada. The general public has also pressured food suppliers and grocery stores to provide pesticide-free products, thus indirectly influencing our choices in agricultural practices

Recent bioherbicide technologies adopted in Canadian

There are two examples of successful biopesticide research and adoption in Canada: (i) *Chondrostereum purpureum* for control of trees and shrubs in rights-of-ways and its registration as Chontrol in 2002, and (ii) *Sclerotinia minor* for control of dandelions in turfgrass and its registration as Sarritor in 2007. Both Chontrol and Sarritor are sold in Canada. Successful adoption (i.e. sales) of these technologies was market demand and reduced competition from

conventional pesticides. For Chontrol, the forestry sector was under increasing pressure to move away from conventional herbicides leaving few alternatives for vegetation management. Since the price point for Chontrol was similar to that of the alternative measures, it has become a successful technology. The rapid adoption of Sarritor by end users benefited from the provincial bans of conventional herbicide in all urban areas of Quebec, Ontario and many other provinces. The bans effectively removed the conventional herbicides and left few effective weed management options to the people.

Bailey, K.L., Boyetchko, S.M., and Längle, T. (2010). Social and economic drivers shaping the future of biological control: A Canadian perspective on the factors affecting the development and use of microbial biopesticides. *Biological Control*, 52, 221-229.